

Byte Fluent

ISSUE-2

Biannual Magazine

Department of Computer Engineering
Govt. Polytechnic, Hisar

ABOUT US

The Department of Computer Engineering was established in the year 2004 with the intake of 60 students initially. It was increased to 120 in the year 2011. The Three Years Diploma Course in Computer Engineering awarded by Haryana State Board of Technical Education, Panchkula and approved by AICTE New Delhi. The department was started to meet the demand for well qualified computer professionals. The department has the pride in showcasing its 100% of admissions. The Department has well qualified and dedicated faculty for the betterment of the students. The department as a departmental library established in PHP lab with more than 200 books and 5 e-journals. The department has well equipped seven computer labs having 170 computer systems with latest computer software and internet facility. Each lab is equipped with projectors for interactive teaching. The PHP lab has a teacher interactive board to conduct the workshops and seminar in the department.



COMPUTER ENGINEERING DEPARTMENT

Vision:

To create competent, excellent professionals by providing quality education in the field of Computer Engineering that meets ever challenging industrial and social needs.

Mission:

M1: To provide various trainings, guidance & counseling to the students for their overall development and placement.

M2: To improve industry collaboration through internship program & interaction with professional's society through Seminar/Workshop/Hackathon/Technical events

M3: To enhance the skills of employability and entrepreneurship through self learning and skills labs.

M4: To Provide a strong theoretical and practical background in Computer Engineering and train students to solve real world problems

Program Educational Objectives (PEO's)

PEO1: Develop a positive attitude towards lifelong learning and succeed in Industry, Higher Education or Entrepreneur endeavor.

PEO2: Apply the knowledge and skills to identify and solve real world problems

PEO3: To equip students with academic, innovative environment for a successful career as Computer Engineering and entrepreneurs

PEO4: To prepare the students to work as a committed professional with strong professional ethics & values, Societal cultural and environmental issues.

Program Outcomes (POs)

PO1: Basic and Discipline specific knowledge: Apply knowledge of basic mathematics, science and Computer Engineering- specific knowledge to solve the engineering problems.

PO2: Design/Development of solutions: Demonstrate the ability to design, development, and conduct experiments, interpret and analyze data and report results for well defined technical problems.

PO3: Engineering tools: Demonstrate the ability to model a live problem or a project that meets desired specifications and requirements using appropriate tools.

PO4: Engineering practices for society: Demonstrate the ability to understand the impact of Computer Engineering on society and incorporate them in engineering solutions

PO5: Sustainability and environment: Apply appropriate technology in context of environment and sustainable development.

PO6: Individual and team work: Demonstrate the ability to function in multidisciplinary or diverse environment as a member or leader of the team

PO7: Life-long learning: Ability to analyze individual needs and engage in updating in the context of technological changes.

Programme Specific Outcomes (PSOs)

PSO1: The ability to employ modern computer languages, tools, environments, and platforms in creating innovative career paths to be an entrepreneur, lifelong learner and to pursue higher studies and also to act as a good citizen by inculcating societal and environmental concerns.

PSO2: Ability to analyze, design, develop, enhance, tests, and maintain software that satisfies the specified requirements.

Editorial Team

Students Members

1. Pratham - 190040800058
2. Vedant - 190040820026
3. Shubham - 190040800089
4. Tania - 190040800099

Faculty Members

1. Dr Mukesh Bansal, Sr. Lecturer
2. Ms Raj Bala, Lecturer

Editor's Message

It gives us a great contentment to bring you the department magazine Byte Fluent. The magazine is a platform to exhibit the innovative ideas of faculty and students. Byte Fluent presents the achievements of students and the contribution of staff. We would like to extend our heartfelt gratitude to all those who have contributed to make this magazine. We are thankful to all authors who have sent their articles.

Editor's Team



Principal Message

The major challenge for today's engineering educational institutions is to accommodate the ever varying aspirations of the younger generation because of increasingly changing demand and development in industries. We constantly put efforts to make Computer Engineering Department that can create IT professionals, who blend effectively, technological skills and to impart an inherent discipline that will help them face challenges in the future. Equally the students are fortunate enough to have born in a free nation, with all the facilities to shape their career in such a way, that they should be part of a good and healthy society with progressive attitude towards divinity.

Er. Ashok Kumar
Principal



HOD Message

It gives me immense pleasure to lead the department of Computer Engineering. The department has well qualified and eminent faculty. The main objective of department is to develop the students both personally and professionally to achieve successful career in Industry, and Academics. The magazine attempts to present the Department and its activities for general information to all concerned.

Rajeev Sardana
Head of Department
Computer Engineering

Technical Articles

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3	History of A.I.
4	Cloud Computing
5	Cloud Security
6	Digitalization during Covid-19
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BIG DATA

Big data is a one of the latest technology in computer science. Big data is a field that treats ways to analyze, systematically extract information from, or otherwise deal with data sets that are too large or complex. Historically, the term Big Data is quite vague and ill defined. It is not a precise term and does not carry a particular meaning other than the notion of its size. The word big is too generic; the question how big is big and how small is relative to time, space, and circumstance. From an evolutionary perspective, the size of Big Data is always evolving. There are 3 types of big data-

Structured data: Structured data in big data is the most straightforward to work with. Structured data is types of big data that profoundly coordinated with measurements.

Unstructured data: This is one of the types of big data where the data format of the relative multitude of unstructured files, for example, image files, audio files, log files, and video files, are incorporated.

Semi-structured data: Semi-structured data is one of the types of big data related to the data containing both the formats referenced over, that is, unstructured and structured data.

Name - Vedant
Roll No.190040820026

Mobile Application Development

In the smart phone era, people bring their portable devices everywhere with them. All thanks to one of the software development's division – mobile development. Determined by your target audience's needs and app characteristics, you are able to pick the best technique for your product. Mobile application development is the process of creating software applications that run on a mobile device, and a typical mobile application utilizes a network connection to work with remote computing resources.

Platform: The platform organizations needed to develop, deploy and manage mobile apps are made from many components and tools which allow a developer to write, test and deploy applications into the target platform environment. Mobile development platforms give developers a single environment possessing all of the tools developers need to create a mobile application.

There are four major development approaches when building mobile applications

A. Native Mobile Applications

B. Cross-Platform Native Mobile Applications

C. Hybrid Mobile Applications

D. Progressive Web Applications

Native Applications: - Native mobile applications are written in the programming language and frameworks provided by the platform owner and running directly on the operating system of the device such as iOS and Android.

Cross-Platform Applications: - Cross-platform native mobile applications can be written in variety of different programming languages and frameworks, but they are compiled into a native application running directly on the operating system of the device.

Hybrid-Web Applications: - Hybrid mobile applications are built with standard web technologies - such as JavaScript, CSS, and HTML5 - and they are bundled as app installation packages.

Progressive Web Applications: - PWAs offer an alternative approach to traditional mobile app development by skipping app store delivery and app installations. PWAs are web applications that utilize a set of browser capabilities - such as working offline, running a background process, and adding a link to the device home screen - to provide an 'app like' user experience.

Tania
Roll No 19004080099

History of A.I.

The history of Artificial Intelligence (AI) began in antiquity, with myths, stories and rumors of artificial beings endowed with intelligence or consciousness by master craftsmen. The field of AI research was founded at a workshop held on the campus of Dartmouth College during the summer of 1956. Artificial Intelligence is not a new word and not a new technology for researchers. This



technology is much older than you would imagine. Following are some milestones in the history of AI which defines the journey from the AI generation to till date development. Those who attended would become the leaders of AI research for decades. Many of them predicted that a machine as intelligent as a human being would exist in no more than a generation, and they were given millions of dollars to make this vision come true. Artificial intelligence (AI) is intelligence demonstrated by machines, as opposed to the natural intelligence displayed by humans or animals. As machines become increasingly capable, tasks considered to require "intelligence" are often removed from the definition of AI, a phenomenon known as the AI effect for instance, optical character recognition is frequently excluded from things considered to be AI, having become a routine technology. Artificial intelligence forms the basis for all computer learning and is the future of all complex decision making.

Name-Hema

Roll No.- 190040800029

Cloud Computing

The term “cloud computing” itself was coined in 1996 within a Compaq internal document. The “cloud” was originally linked to the concept of distributed computing. The concept was initially discussed by J.C.R. Licklider, the first director of Information Processing Techniques Office at the Pentagon's ARPA division in the 1960s, according to Computer world Cloud computing is the delivery of different services through the Internet. These resources include tools and applications like data storage, servers, databases, networking, and software. Cloud computing is the on-demand availability of computer system resources, especially data storage (cloud storage) and computing power, without direct active management by the user. Cloud computing relies on sharing of resources to achieve coherence and economies of scale, typically using a model which can help in reducing capital expenses but may also lead to unexpected operating expenses for unaware users.



Types of Cloud Services:

Software-as-a-service (SaaS)

Infrastructure-as-a-service (IaaS)

Platform-as-a-service (PaaS)

**Name -Arun Sangwal
Roll NO.-190040800012**



Cloud Security

Traditionally, security concerns have been the primary obstacle for organizations considering cloud services, particularly public cloud services. In response to demand, however, the security offered by cloud service providers is steadily outstripping on-premises security solutions. According to security software provider McAfee, today, 52% of companies experience better security in the cloud than on-premises (link resides outside IBM). Some cloud security best practices include the following:

- **Shared responsibility for security:** Generally, the cloud provider is responsible for securing cloud infrastructure and the customer is responsible for protecting its data within the cloud—but it's also important to clearly define data ownership between private and public third parties.
- **Data encryption:** Data should be encrypted while at rest, in transit, and in use. Customers need to maintain full control over security keys and hardware security module. User identity and access management: Customer and IT teams need full understanding of and visibility into network, device, application, and data access.
- **Collaborative management:** Proper communication and clear, understandable processes between IT, operations, and security teams will ensure seamless cloud integrations that are secure and sustainable.

Digitalization during Covid-19

The relationship between humans and digital technologies has been defined extensively so many times but now it is needed to be reviewed in the current global Covid-19 pandemic crisis. In an effort to control the pandemic, various types of human activities and behaviours like learning, shopping, communication, entertainment, medical, business, jobs shifted from offline to online. IT, in fact, makes things much more manageable in this crucial time of chaos and disruption.

Digital health has become an important part of the medical world. Hospitals, healthcare centers all over the world have digital tools in testing facilities & laboratories. IT shares patient data, test results & other health information whenever needed during Covid-19. Most patients with Covid-19 were managed remotely with self-isolation and consultations done through mobile devices, webcam enabled computers and online conferencing applications. Radiologists, surgeon's nurses, patients are the beneficiaries of this virtual healthcare.

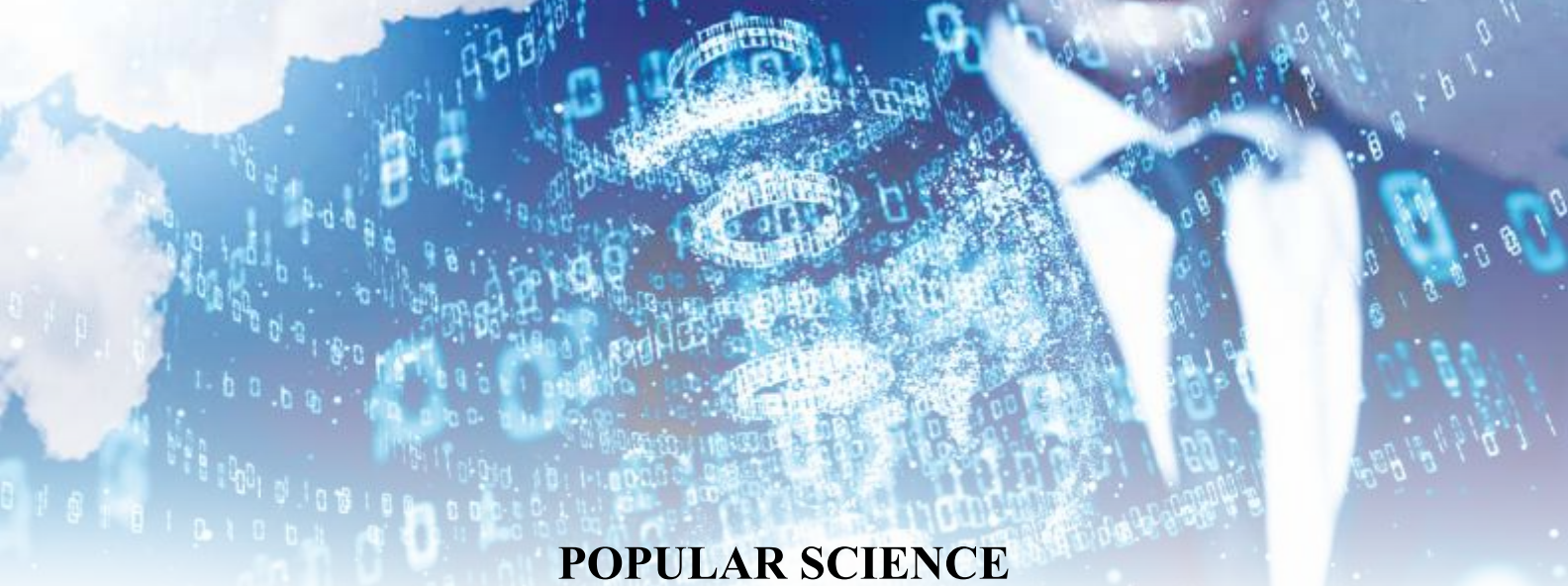
Covid-19 forced educational activities including teaching, learning, communicating to be operated remotely. Educations and students are becoming the second largest group of digital technology users now. With the transition from face to face to online study, teachers have to adapt online teaching & put greater efforts into preparing for online courses, innovating, designing lessons & patiently turn students from passive recipients to engaged learners.

Information Technology has enabled people to share information easily & quickly during this time. Any update, statistics breakthroughs, preventive measures, medical advice to save lives are shared through networks & devices in seconds. Business world has also relied heavily devices in a matter of seconds. Business world has also relied heavily on Information Technology for smooth functioning. Employers are ensuring work from home measures for it. In an age of panic and fear people are connected with such digital technologies. Zoom, Facebook, Messenger Blackboard, Coursera, Google Hangouts, online surveys, telework technologies, virtual services, GIS, AI, Google Trends have become working, teaching or communicating assistant and built bridges to maintain the social interaction for daily life in this special time effectively and safely.

Thus, it is the demand of the time to rethink about the use of emerging digital technologies, the type of people using these, the specific activities in which these are used and the effects of using these technologies on humans during such unprecedented period of crisis like Covid-19.

Munish Kumar

Lecturer in Computer Engg
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POPULAR SCIENCE

Popular science also called pop-science or popsci is an interpretation of science intended for a general audience. It may be written by professional science journalists or by scientists themselves.

Science and society are two worlds which unfortunately often lie far from each other and, in order to bridge the gap, scientists write popular articles for publication in magazines and newspapers. These articles strive to inform a non-specialist audience about new scientific insights and discoveries. A good story is one that you start reading and can't put down! The most crucial thing to remember when writing popular science is that the intended reader is not an expert. That means readers have to find your article appealing to start reading. The next challenge for you is to maintain their interest until Begin ordering your ideas by asking yourself the questions when you know what you want to communicate, and why, you can then lay out your core idea first, and expand on it in the rest of the document. Always make sure you ask yourself the exact purpose of what you are writing. When you have a clear intent, you have a much better chance of crafting an effective document. Know where you are going. The take-home message should be at the end, and you should set up a human connection and a question that drives your reader from beginning to end, rewarded with clues along the way. Research has shown that when it comes to focus, people remember the beginning a good title will excite your readers and catch their attention. A popular science title should attract use as few technical terms as possible, and avoid excessively long sentences.

INTERNET

The Internet is the global system of interconnected computer networks that uses the Internet protocol suite to communicate between networks and devices. It is a network of networks that consists of private, public, academic, business, and government networks of local to global scope, linked by a broad array of electronic, wireless, and optical networking technologies. The Internet carries a vast range of information resources and services, such as the inter-linked hypertext documents and applications of the World Wide Web, electronic mail, telephony, and file sharing.

The origins of the Internet date back to the development of packet switching and research commissioned by the United States Department of Defense in the 1960s to enable time-sharing of computers. The funding of the National Science Foundation Network as a new backbone in the 1980s, as well as private funding for other commercial extensions, led to worldwide participation in the development of new networking technologies, and the merger of many networks. The linking of commercial networks and enterprises by the early 1990s marked the beginning of the transition to the modern Internet and generated a sustained exponential growth as generations of institutional, personal, and mobile computers were connected to the network. Although the Internet was widely used by academia in the 1980s, commercialization incorporated its services and technologies into virtually every aspect of modern life. Most traditional communication media, including telephony, radio, television, paper mail and newspapers are reshaped, redefined, or even bypassed by the Internet, giving birth to new services such as email, Internet telephony, Internet television, online music, digital newspapers, and video streaming websites. Newspaper, book, and other print publishing are adapting to website technology, or are reshaped into blogging, web feeds and online news aggregators. The Internet has enabled and accelerated new forms of personal interactions through instant messaging, Internet forums, and social networking services. Online shopping has grown exponentially for major retailers, small businesses, and entrepreneurs, as it enables firms to extend their "brick and mortar" presence to serve a larger market or even sell goods and services entirely online. Business-to-business and financial services on the Internet affect supply chains across entire industries. The Internet has no single centralized governance in either technological implementation or policies for access and usage.

Name-Sachin Sharma
Roll No.- 1900040820018

An overview of Metaheuristics

A metaheuristic is formally defined as an iterative generation process which guides a subordinate heuristic by combining intelligently different concepts for exploring and exploiting the search space, learning strategies are used to structure information in order to find efficiently near-optimal solutions. It is composed of two Greek words, *meta* means “beyond, in an upper level” and *heuriskein* means “to find”. Basically, metaheuristics are high level strategies for exploring search spaces in such a way that a dynamic balance is maintained between exploration of the search space (also called diversification) and exploitation of the accumulated search experience (also called intensification). This balance is necessary on one side to quickly identify regions in the search space with high quality solutions and on the other side not to waste much time in regions of the search space which are either already explored or do not provide high quality solutions.

Classification of metaheuristics:

A number of researchers have classified metaheuristics according to different criteria in their own ways. It is really challenging to classify these algorithms as there is no clear guidelines to set out the criteria in the literature. Some of the prominent classifications are: nature inspired vs. non-nature inspired, population based vs. single point search, memory usage vs. memory less methods, dynamic vs. static objective function and many more. The nature has been evolving for several hundreds of years and has found various ingenious solutions to problem-solving and adaption to ever-changing environments. A large number of problem solving techniques have been deduced by inspiration from nature till date. A number of nature inspired methods are based on successful characteristics of biological systems, whereas many algorithms have been developed by using inspiration from physical and chemical systems. Among biology inspired algorithms, a number of algorithms have been developed by drawing inspiration from swarm intelligence and have become most popular in the recent past. An overview of classification of metaheuristics algorithms is given in Fig. 1.

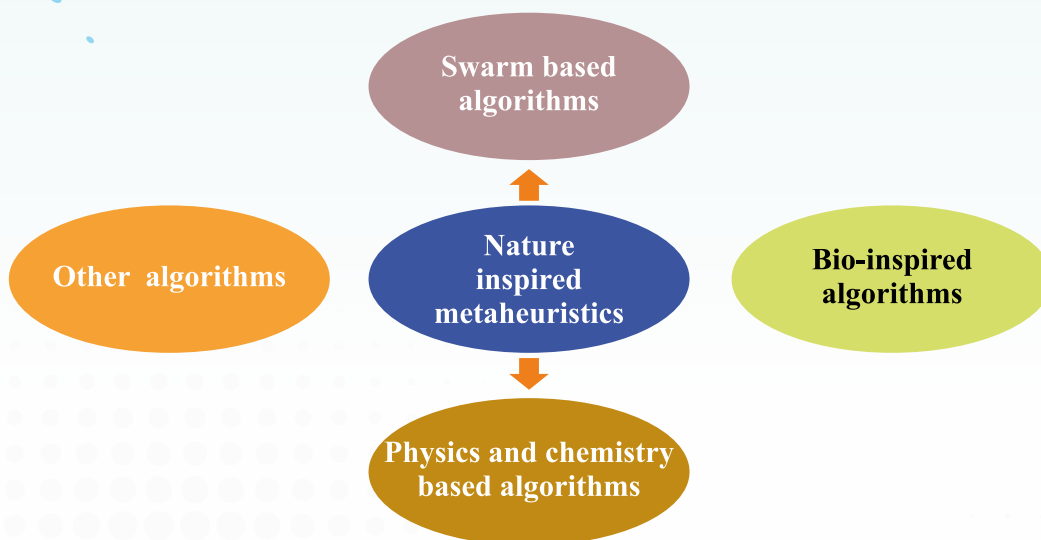


Fig. 1. Classification of metaheuristics

Ajit Kumar

Lecturer

Department of Computer Engg.

Operating System

An operating system (OS) is the program that, after being initially loaded into the computer by a boot program, manages all of the other application programs in a computer. The application programs make use of the operating system by making requests for services through a defined application program interface (API). In addition, users can interact directly with the operating system through a user interface, such as a command-line interface (CLI) or a graphical UI (GUI).

Types of Operating Systems

- Batch OS.
- Distributed OS.
- Multitasking OS.
- Network OS.
- Real-OS.
- Mobile OS.

Common desktop operating systems include the following:

Windows is Microsoft's flagship operating system, the de facto standard for home and business computers. Introduced in 1985, the GUI-based OS has been released in many versions since then. The user-friendly Windows 95 was largely responsible for the rapid development of personal computing.

- Mac OS is the operating system for Apple's Macintosh line of PCs and workstations.
- Unix is a multiuser operating system designed for flexibility and adaptability. Originally developed in the 1970s, Unix was one of the first operating systems to be written in the C language.
- Linux is a Unix-like operating system that was designed to provide PC users a free or low-cost alternative. Linux has a reputation as an efficient and fast-performing system.

Priya
Roll No.- 190040800061

SEO (Search Engine Optimization)

SEO stands for “search engine optimization.” In simple terms, it means the process of improving your site to increase its visibility when people search for products or services related to your business in Google, Bing, and other search engines.

How does SEO work?

Search engines such as Google and Bing use bots to crawl pages on the web, going from site to site, collecting information about those pages and putting them in an index. Think of the index like a giant library where a librarian can pull up a book (or a web page) to help you find exactly what you're looking for at the time. Next, algorithms analyse pages in the index, taking into account hundreds of ranking factors or signals, to determine the order pages should appear in the search results for a given query. In our library analogy, the librarian has read *every single book* in the library and can tell you exactly which one will have the answers to your questions.

Our SEO success factors can be considered proxies for aspects of the user experience. It's how search bots estimate exactly how well a website or web page can give the searcher what they're searching for. Unlike paid search ads, you can't pay search engines to get higher organic search rankings, which means SEO experts have to put in the work. That's where we come in. Our Periodic Table of SEO Factors organizes the factors into six main categories and weights each based on its overall importance to SEO. For example, content quality and keyword research are key factors of content optimization, and crawl ability and speed are important site architecture factors.

Benefits of SEO

Search engine optimization is a key part of online marketing because search is one of the primary ways that users navigate the web. Search results are presented in an ordered list, and the higher up on that list a site can get, the more traffic the site will tend to receive. For example, for a typical search query, the number one result will receive 40-60% of the total traffic for that query, with the number two and three results receiving significantly less traffic. Only 2-3% of searchers click beyond the first page of search results. Thus, even a small improvement in search engine rankings can result in a website receiving more traffic and potentially business. Because of this, many businesses and website owners will try to manipulate the search results so that their site shows up higher on the search results page (SERP) than their competitors. This is where SEO comes in.

Name -Rahul

Roll No.-190040800064

Web Development

A web developer's essential tasks are to design code and implement functional websites for their clients. Web developers are responsible for designing and developing websites and website applications. Using a variety of programming languages and web technologies, web developers manage site functionality, implement application features, and integrate security measures.

Platforms: The most popular development platforms are PHP, .NET, and JSP. Here's a quick look at each of them:

Alternatives for Front End Development

There are major development approaches when building Front End Development

1. **Software**
2. **Wordpress**
3. **Typescript**
4. **Elm**
5. **Dart**

Software: Software like CoffeeCup and Dreamweaver include pre-built websites you can use as a starting point for your project.

Wordpress: One very popular way to build websites, wordpress, isn't a website builder. Instead, Wordpress is a content management system. This makes it sort of a hybrid between a builder and using HTML software as far as the editing goes

Typescript: Since JavaScript was developed to be a client-side scripting language for websites, it includes limitations when it is used in enterprise scale projects including lack of object-oriented programming practices.

Elm: Functional programming provides safer apps with fewer runtime errors, but it was hard to discover a functional solution that is type-safe and simple to use until the Elm programming language.

Dart: Dart is not the newest language in web development, and several new features make it a cool JavaScript alternative to choose.

Name- Shubham
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5G

5G Wireless Systems

5G is the 5th generation mobile network. 5G wireless technology is meant to deliver higher multi-Gbps peak data speeds, ultra low latency, more reliability, massive network capacity, increased availability, and a more uniform user experience to more users. Higher performance and improved efficiency empower new user experiences and connects new industries.

THE SPEED PROPOSITION:-

The biggest promise of 5G for consumers is this: Media transfer and data transaction speeds comparable to wired Ethernet networks across the country, and at boosted speeds in areas where the topology and service infrastructure support the necessary technology. Once all of 5G's components are fully deployed and operational, you will not need any kind of wire or cable to deliver communications or even entertainment service to your mobile device, to any of your fixed devices (HDTV, security system, smart appliances), or your automobile.

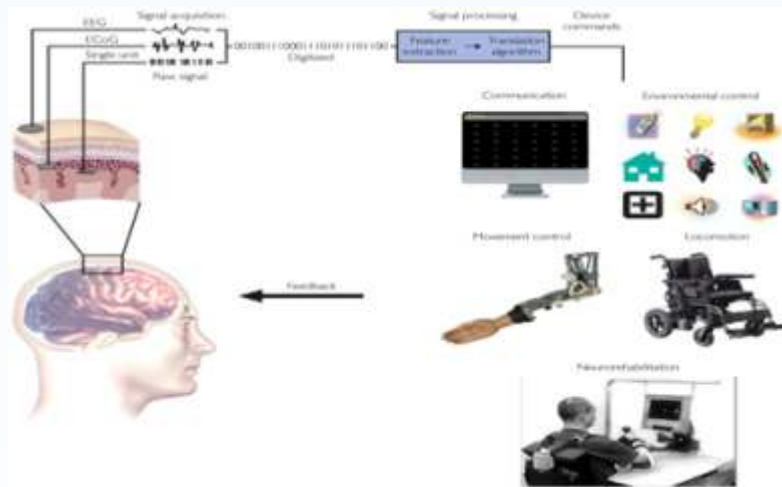
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Brain Computer interface

Brain Computer Interface (BCI) or Brain Machine Interface (BMI) is a computer-based system that acquires brain signals, analyzes them, and translates them into commands that are relayed to an output device to carry out a desired action. Brain-computer interfaces do not read minds in the sense of extracting information but enable users to act on the world by using brain signals rather than muscles. The user and the BCI work together. The user generates brain signals that encode intention, and the BCI decodes signals and translates them into commands to an output device that accomplishes the user's intention. Thus, BCIs do not use the brain's normal output pathways of peripheral nerves and muscles. Brain-computer interfaces require a good signal-acquisition hardware that is convenient, portable, safe, and able to function in all environments. BCI technology allows a human brain and an external device to talk to one another—to exchange signals. It gives humans the ability to directly control machines, without the physical constraints of the body.

Electrical signals from brain activity are detected by recording electrodes located on the scalp, on the cortical surface, or within the brain. The brain signals are amplified and digitized. Pertinent signal characteristics are extracted and then translated into commands that control an output device, such as a motorized wheelchair, or a prosthetic limb. BCI can be Invasive or Non Invasive depending on the placement of Electronic devices either inside brain or on the skull.



Initially, BCIs were developed keeping biomedical applications in mind, leading to the generation of assistive devices. They have facilitated restoring the movement ability for physically challenged or paralyzed users and replacing lost motor functionality. The promising future for BCI has encouraged research community to study the involvement of BCI in the life of non-paralyzed humans also. The major applications of BCI involve User State Monitoring, Gaming and Entertainment, Training and Education, Cognitive Improvement and safety and security. Despite valid concerns, BCI can likely be useful for future military operations.

Ultimately, BCI has proved that humans and machines could collaborate cognitively and seamlessly—to think together.

Raj Bala

Lecturer

Department of Computer Engineering



GREAT BENEFITS OF ONLINE EDUCATION

Students are more fascinated with the online classes these days. E-learning has gained a lot of popularity and supremacy these days, especially for the students who are preparing for the competitive exams. The best feature of this online education is that they come with interactive classes between the teachers and students. This kind of teaching method is booming these days as it can solve various issues faced by students. And, there are many E-learning companies which provide you with two-way interactive classes.

Online Education Benefits Better retention

The online classes provide very engaging and interesting examples for each and every concept. Because of which the students are taking very less time to understand the concept and present it perfectly in the exam. This is because the concepts and examples are linked with real-life scenarios. This will make the students remember the concept for a longer period of time. If they really enjoy the concept provided by enjoying the learning experience it is easy for them to recall the topic.

E-Learning saves a lot of time and money

Managing time is really important for all the students as they have to study at least 5 to 6 subjects. E-learning has saved a lot of time for the students as they can take up the class from anywhere at any type of time. It is not mandatory for them to be in a particular place to take up the class. In this way, they are saving a lot of time.

Flexibility

Here, if a student doesn't understand any topic, he can listen to multiple classes with various other lectures. There will be no count on the number of classes a student is attending. If he/ she misses any class, he can join another class instead.

You can clear your doubts anytime with these online classes. You can also shoot the doubts when you are attending the class..

Access to experts

Students get a personalized plan based on the performance and the potential of them. Instructors who train them are subject matter experts, who have years of experience in the same field. They will know the capability of the student and their understanding level through the LIVE classes.

Name -Sahil Kumar
Roll No.-190040820019

CRYPTO CURRENCY

In 1983, the American cryptographer David Chaum conceived an anonymous cryptographic electronic money called Ecash. Later, in 1995, he implemented it through Digicash, an early form of cryptographic electronic payments which required user software in order to withdraw notes from a bank and designate specific encrypted keys before it can be sent to a recipient. This allowed the digital currency to be untraceable by the issuing bank, the government, or any third party. In 2009, the first decentralized cryptocurrency, bitcoin, was created by presumably pseudonymous developer Satoshi Nakamoto. It used SHA-256 hash function.

The validity of each cryptocurrency's coins is provided by a blockchain. A blockchain is a continuously growing list of records, called blocks, which are linked and secured using cryptography. Each block typically contains a hash pointer as a link to a previous block, a time stamp and transaction data. By design, blockchains are inherently resistant to modification of the data. It is "an open, distributed ledger that can record transactions between two parties efficiently and in a verifiable and permanent way". For use as a distributed ledger, a blockchain is typically managed by a peer-to-peer network collectively adhering to a protocol for validating new blocks. Once recorded, the data in any given block cannot be altered retroactively without the alteration of all subsequent blocks, which requires collusion of the network majority.

Name- Sameer Kataria
Roll No. 190040820020

Blockchain, Types and its working

The blockchain is a decentralized ledger of all transactions across a peer to peer network. Using this technology, participants can confirm transactions without involving any third-party intermediary.

Types of Blockchains

1. Public Blockchains: Public blockchains are open, decentralized networks of computers accessible to anyone wanting to request or validate a transaction. Two common examples of public blockchains include the Bitcoin and Ethereum (ETH) blockchains.

2. Private Blockchains: Private blockchains are not open, they have access restrictions. People who want to join require permission from the system administrator. For example, Hyperledger is a private, permissioned blockchain.

3. Hybrid Blockchains or Consortiums: Consortiums are a combination of public and private blockchains and contain centralized and decentralized features. For example, Energy Web Foundation, Dragonchain

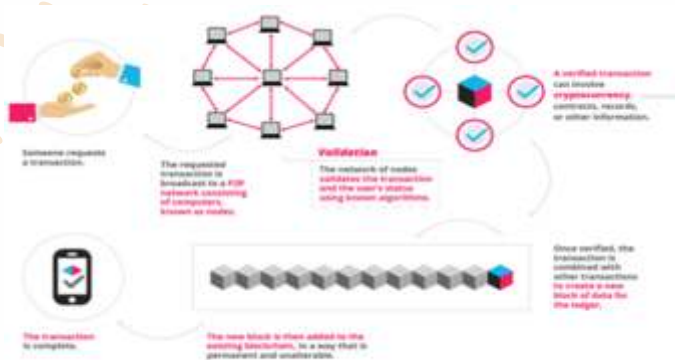
4. Sidechains: A sidechain is a blockchain running parallel to the main chain. It allows users to move digital assets between two different blockchains and improves scalability and efficiency. An example of a sidechain is the Liquid Network.

Working Mechanism

Initially, when a user creates a transaction over a Blockchain network, a block will be created,

representing that transaction is created. Once a block is created, the requested transaction is broadcasted over the peer-to-peer network, consisting of computers, known as nodes, which then validate the transaction. A verified transaction can involve crypto currency, contracts, records, or any other valuable information. Once a transaction is verified, it is combined with other blocks

to create a new block of data for the ledger. Whenever a new block is created, it is added to the existing Blockchain network confirming that it is secured and immutable.



Mukesh Bansal

Senior Lecturer

Department of Computer Engineering

Department Events

1. Department has organized “ TechVoice” Alumni Meet-2021 on 23 Oct 2021 . About fifty Alumni have participated in the Meet. They all share their experiences and motivate the final year students for their bright future. The alumni are working in reputed software industries like IBM, TCS, TechMahindra, Voda Phone etc and some are very good entrepreneur.



2. Stakeholder Meeting was organized on 15/09/2021 for further improvement in PEOs and POs of the Department. All the Stackholders were actively participated in the meeting.



Expert Lecturers and Technical Event organized

1. Webinar cum Workshop on 360 Degree feedback was conducted on 09/04/2021 by Faculty Development Cell AICTE(HQ), New Delhi
2. A competition was organized for final year students on Vision, Mission, PEOs, POs and PSOs in Operating System Lab.
3. Anti Terrorism Day was celebrated on 21st May
4. Workshop was organized on Applications of IOT in current scenario by Sh Abhishek on dated 18/10/2021 in PHP Lab.
5. A webinar was conducted under IBM Skills build Orientation on dated 22/10/2021 in which 79 students were participated in the webinar

ISTE- Student Chapter

1. The webinar under ISTE chapter was organized on Future aspects of Diploma Engineering in the world of work on 9th Feb, 2021 for final years students of Computer Engg and ECE students
2. The workshop under ISTE chapter was organized on Managerial aspects for Diploma Students on 6th October, 2021 for final years students of Computer Engg students



MOU

MOU has been signed in between Department of Computer Engineering Govt. Polytechnic Hisar and Repozitory Technologies Pvt. Ltd. Hisar on Dated 16/09/2021.



Placement Drive

1. Rajnish Trikaldarshi, is selected as intern in Daffodil software Company on 3 Aug 2021.
2. Seven students were selected as a trainee in VSERV Solutions Pvt Ltd Noida on 7th October 2021
3. Five Student were selected as Junior Software Engineer in Repozitory Technologies Pvt. Ltd. on 27/09/2021.



हिसार भास्कर 25-10-2021

गवर्नमेंट पॉलिटेक्निक में आयोजित टेक वॉइस एल्युमनाई मीट में पूर्व छात्रों ने साझा किए अनुभव

हिसार। गवर्नमेंट पॉलिटेक्निक के कंप्यूटर इंजीनियरिंग विभाग के द्वारा पूर्व छात्र मिलन समारोह टेक वॉइस एल्युमनाई मीट का आयोजन किया गया। जिसमें लगभग 50 पूर्व छात्रों ने हिस्सा लिया। जोकि वर्तमान में नामी कंपनियों में उच्च पदों पर कार्यरत हैं। मीट के दौरान पूर्व छात्रों ने अपने अनुभव साझा किए और विद्यार्थियों को आज के समय की जरूरत के मुताबिक व्यवहारिक व तकनीकी ज्ञान पर फोकस करने के टिप्स दिए। कार्यक्रम में पूर्व छात्रों के सम्मान में सांस्कृतिक कार्यक्रम का भी आयोजन किया गया। इस अवसर पर प्रवीण पन्ना, कुलभूषण, डॉ. अजीत कुमार, नवीन अरोड़ा, नितिन, गरिमा आदि मौजूद रहे।



हिसार भास्कर 17-09-2021

मीटिंग में तकनीकी पाठ्यक्रम की एक्सीडेंट पर हुई चर्चा



हिसार। राजकीय बहुतकनीकी संस्थान में कंप्यूटर इंजीनियरिंग विभाग द्वारा दूसरी स्टेकहोल्डर मीटिंग के दौरान मौजूद मेंबर्स व अन्य।

हिसार। राजकीय बहुतकनीकी संस्थान के कंप्यूटर इंजीनियरिंग विभाग द्वारा दूसरी स्टेकहोल्डर मीटिंग की। इस मीटिंग का उद्देश्य नेशनल बोर्ड ऑफ एक्सीडेंटेशन दिल्ली द्वारा कंप्यूटर इंजीनियरिंग पाठ्यक्रम को एक्सीडेंट कराने की ओर बढ़ाना रहा। इस दौरान विभिन्न सॉफ्टवेयर कंपनी के रिसोर्स पर्सन्स, विभिन्न सॉफ्टवेयर इंडस्ट्री में कार्यरत संस्थान के एलुमनी ने हिस्सा लिया। मीटिंग कोर्डीनेटर डॉ. मुकेश बंसल ने मीटिंग के उद्देश्य के बारे में जानकारी दी। इसके साथ ही एक्सीडेंटेशन के लिए विभाग द्वारा बनाए विभिन्न फ़ोडवैक प्रोफार्मा के बारे में चर्चा की गई। एआईसीटीई दिल्ली द्वारा शिक्षा का स्तर सुधारने के लिए देश-प्रदेश के सभी तकनीकी कोर्सेज को एक्सीडेंट करवाने के लिए पहले से दिशा निर्देश दे दिए गए हैं। इस दौरान प्रिंसिपल अशोक कुमार ने बताया की समाज के उत्थान के लिए शिक्षा में तकनीकी शिक्षा का अति महत्वपूर्ण योगदान है। इसके लिए विभिन्न विभागों की नेशनल बोर्ड ऑफ एक्सीडेंटेशन से एक्सीडेंट कराना समय की मांग है।

अमर उजाला 26-10-2021

तकनीकी ज्ञान पर फोकस करने का दिया संदेश



हिसार। दिल्ली बाईपास स्थित राजकीय बहुतकनीकी संस्थान के कंप्यूटर विभाग के द्वारा पूर्व छात्र मिलन समारोह 'टेक वॉइस एलुमनाई मीट' मनाई। जिसमें 50 पूर्व छात्रों ने हिस्सा लिया जो वर्तमान में टीसीएस, आईबीएम, टेक महिंद्रा वीडियो कॉन्फ्रेंस आदि जैसी कंपनियों में उच्च पदों पर कार्यरत हैं। बंगलूरु आईबीएम में कार्यरत रवि कुमार ने बताया कि कैसे जीवन में टाइम मैनेजमेंट की अपनाकर इस मुकाम पर पहुंचा। टीसीएस में कार्यरत रघु ने बताया कि डिप्लोमा इन कंप्यूटर इंजीनियरिंग एक ऐसा प्लेटफॉर्म है जो आपको नए अवसर की ओर ले जाता है। पूर्व छात्र मिलन समारोह का शुभारंभ मुख्य अतिथि रिपोजिटरी टेक्नोलॉजी के मुख्य कार्यकारी अधिकारी नितिन गोयल, प्राचार्य अशोक कुमार, ट्रेनिंग एंड प्लेसमेंट ऑफिसर राम रमेश, विभागाध्यक्ष राजीव सरदाना, एनबीए को-ऑर्डिनेटर डॉ. मुकेश बंसल ने संयुक्त रूप से किया। इस अवसर पर प्रवीण पन्ना, कुलभूषण, डॉ. अजीत कुमार, नवीन अरोड़ा, नितिन आदि मौजूद थे। सवाद

नोशाप रोड पर सीता लाइन टरी भगा पानी



हिसार भास्कर 23-09-2021

राजकीय बहुतकनीकी संस्थान के आठ विद्यार्थियों का चयन, 27 को ज्वाइनिंग



हिसार। राजकीय बहुतकनीकी संस्थान के आठ विद्यार्थियों का चयन हुआ है। इनमें मैकेनिकल विभाग के 3 छात्रों का ऑफ कैपस चयन डी पाईपिंग ततारपुर जिला पलवल में हुआ। संस्थान के टीपीओ डॉ. राम रमेश ने बताया कि चयनित छात्रों के नाम दीपक, प्रदीप, नीरज पांडे हैं। एटीपीओ सतिंदर ने बताया कि इन सभी छात्रों की ज्वाइनिंग ततारपुर गांव में स्थित प्लॉट में 27 सितंबर को होगी। उधर, कंप्यूटर इंजीनियरिंग के पांच छात्रों का रिपोजिटरी टेक्नोलॉजिस कम्पनी में ट्रेनी इंजीनियर के पद पर चयन हुआ है। संस्थान के छात्र दक्ष बेनीवाल, शुभम वर्मा को 2.40 लाख व रिषभ, मो निजाम, मो रिजवान को 2.10 लाख सालाना का पैकेज मिला है। संस्थान के प्राचार्य अशोक सरोहा एवं प्लेसमेंट अधिकारी डॉ. राम रमेश ने चयनित छात्रों को बधाई दी।

